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EXAMINER

BURLESON, MICHAEL L

ART UNIT PAPER NUMBER

2626

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,323

Applicant(s)

SAWADA ET AL.

Examiner

Michael Burleson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-15 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/6
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto et al. US 6381428.

1. Regarding claim 1, Yamamoto et al. teaches of exposure devices of the LED array (32) (column 20, lines 40-45), which reads on an image forming apparatus

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comprising an exposure unit which exposes an image carrier by emitting light of light emitting elements based on image data. He teaches on a circuit that corrects the variations of the light emitting luminance of each LED can be mounted on the chip where the LED array (32) and driver circuit (33) are mounted (column 21, lines 1-16), which reads on an input device for imputing distortion data of the exposure unit. He also teaches of a driver circuit (33), which controls lens (34) to ensure that an image is formed on the photoconductor (column 21, lines 19-21) and folding mirror (31) which exposes the photoconductor (column 21, lines 38-43), which reads on a controller which controls an exposure position of an image to be exposed by the exposure unit, based on the input distortion data.

2. Regarding claim 2, Yamamoto et al. teaches that the LED arrays (32) are arranged in a line (column 20, lines 51-53), which reads on the exposure unit includes a plurality of the light emitting elements that are arranged in a line.

3. Regarding claim 3, Yamamoto et al. teaches that the LEDs emit light independently and provide high speed operation (column 20, lines 48-51), which reads on data corresponding to each of the light emitting elements are input.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. US 6381428 in view of Sato et al. US 4939553.
6. Regarding claim 4, Yamamoto et al. teaches of exposure devices of the LED array (32) (column 20, lines 40-45), which reads on an image forming apparatus comprising an exposure unit which exposes an image carrier by emitting light of light emitting elements based on image data. He teaches on a circuit that corrects the variations of the light emitting luminance of each LED can be mounted on the chip where the LED array (32) and driver circuit (33) are mounted (column 21, lines 1-16), which reads on an input device for imputing distortion data of the exposure unit. He also teaches of a driver circuit (33), which controls lens (34) to ensure that an image is formed on the photoconductor (column 21, lines 19-21) and folding mirror (31) which exposes the photoconductor (column 21, lines 38-43), which reads on a controller which controls an exposure position of an image to be exposed by the exposure unit, based on the input distortion data.
7. Yamamoto et al. fails to teach the input device is an operation panel operated by a user.
8. Sato et al. teaches of correction on the basis of a variation of the light emitting elements (5) and the light receiving elements (7) can be performed on the operation panel (100) (column 6, lines 21-24), which reads on the input device is an operation panel operated by a user.

Yamamoto et al. could have easily been modified with the operation panel of Sato et al. This modification would have been obvious to one skilled in the art at the time of the invention to input the distortion data of the image data.

9. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. US 6381428 in view of Imaizumi et al. US 6215512.

10. Regarding claim 6, Yamamoto et al. teaches of exposure devices of the LED array (32) (column 20, lines 40-45), which reads on an image forming apparatus comprising an exposure unit which exposes an image carrier by emitting light of light emitting elements based on image data. He teaches on a circuit that corrects the variations of the light emitting luminance of each LED can be mounted on the chip where the LED array (32) and driver circuit (33) are mounted (column 21, lines 1-16), which reads on an input device for inputting distortion data of the exposure unit. He also teaches of a driver circuit (33), which controls lens (34) to ensure that an image is formed on the photoconductor (column 21, lines 19-21) and folding mirror (31) which exposes the photoconductor (column 21, lines 38-43), which reads on a controller which controls an exposure position of an image to be exposed by the exposure unit, based on the input distortion data and skew correction data.

11. Yamamoto et al. fails to teach of a transfer unit, which transfers a latent image created on an image carrier as a revealed image onto a transfer body, at least two optical sensors, which read out resist patterns formed on the transfer body and a data processor which forms skew correction data based on a relative deviation amount in

main and sub scanning directions of the exposure unit, that is obtained by a readout of the resist patterns by the optical sensors.

12. Imaizumi et al. teaches that a latent image is transferred by a feeding belt (transfer belt) (304) (column 4, lines 14-20 and column 17, lines 65-66), which reads on a transfer unit which transfers a latent image created on the image carrier as a revealed image onto a transfer body. He teaches of three sensors (314) that read out resist patterns on the transfer belt (304) (column 17, lines 65, column 18, lines 57-61 and figure 20), which reads on at least two optical sensors which read out resist patterns formed on said transfer body. Imaizumi et al. teaches that data on the amount of correction of the image distortion along the main and sub scan directions to be corrected is changed accordingly by a central processing unit that expands the data according to the resist sensors (column 16, lines 46-55), which reads on a data processor which forms skew correction data based on a relative deviation amount in main and sub scanning directions of the exposure unit, that is obtained by a readout of the resist patterns by the optical sensors.

Yamamoto et al. could have easily been modified with the transfer unit, optical sensors and data processor of Imaizumi et al. This modification would have been obvious to one skilled in the art at the time of the invention to transfer the created image and to form skew correction data based on resist patterns, which are read out by sensors.

13. Regarding claim 7, Yamamoto et al. teaches that the LED arrays (32) are arranged in a line (column 20, lines 51-53), which reads on the exposure unit includes a plurality of the light emitting elements that are arranged in a line.

14. Regarding claim 8, Yamamoto et al. teaches that the LEDs emit light independently and provide high speed operation (column 20, lines 48-51), which reads on data corresponding to each of the light emitting elements are input.

15. Regarding claim 9, Imaizumi et al. teaches that the positions of the sensors (314) are determined from the position shifts (column 19, lines 41-53) and shows that the sensors (314) are in the main-scanning direction (figure 20), which reads on each optical sensors is arranged in a position at a predetermined distance in the main-scanning direction from a center position of the arrangement of the light emitting elements.

Allowable Subject Matter

1. Claims 10-15 are allowed.

2. Regarding claim 10, the closest references Yamamoto et al. US 6381428 and Imaizumi et al. US 6215512 fails to teach of a controller that determines the recording positional deviation data of the exposure unit based on the results of resist patterns and controls the exposure positions of the image based on the recording positional deviation data and distortion data.

3. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

1. Any inquiry concerning this communication should be directed to Michael Burleson whose telephone number is (703) 305-8683 and fax number is (703) 746-3006. The examiner can normally be reached Monday thru Friday from 8:00 a.m. – 4:30p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached at (703) 305-4863

KA Williams
KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER

Michael Burleson
Patent Examiner
Art Unit 2626

MB

Mlb
July 22, 2004